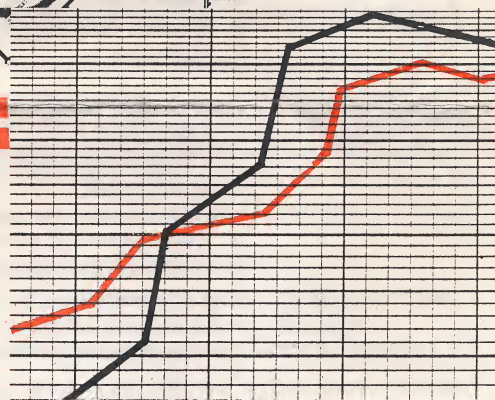
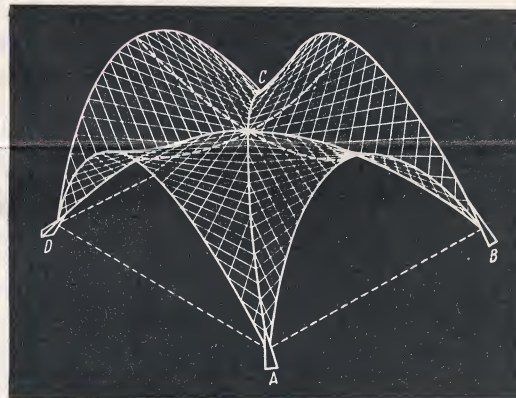
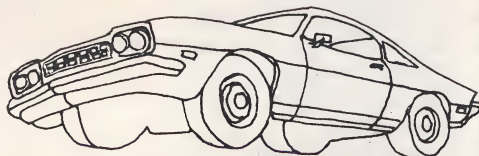


Jan 79



**A 3-day  
Concentrated Seminar**

**Understanding  
and Using**

# Computer Graphics

**The Explosive New Technology  
whose Time has Come!!**



**Frost & Sullivan, Inc.**  
106 Fulton St., New York, N.Y. 10038  
Tel. 212-233-1080

**February 5-7  
April 18-20**

**New York  
Dallas**

# Program

## Understanding and Using Computer Graphics

- I **What is Graphics?**
  - 1. Batch vs. interactive
  - 2. Non-graphics vs. graphics
  - 3. Borderline . . . primitive graphics, electrostatic plotters
  - 4. Passive vs. active
  - 5. Hard copy vs. soft copy
  - 6. Dumb terminal vs. smart terminal
  - 7. Host-terminal
  - 8. Host-satellite
  - 9. Stand-alone
  - 10. Time-sharing batch
  - 11. Remote job entry
- II **Why Computer Graphics?**
  - 1. Save time
  - 2. Save money
  - 3. Improve decision-making
  - 4. Can't do any other way
- III **What are Graphics Used for?**
  - 1. Preview data before processing
  - 2. Review data after processing
  - 3. Control and monitoring processes or devices
  - 4. Create and optimize devices
  - 5. Visualize data relationships
  - 6. Data manipulation
  - 7. Image processing and pattern recognition
  - 8. Create and change drawings
  - 9. Create manufacturing data
  - 10. Dynamic simulation
  - 11. Text editing
- IV **Elements of a Computer Graphics System**
  - 1. Host computer
  - 2. Communication
  - 3. User work station
  - 4. User input devices
  - 5. System output devices
  - 6. Software
- V **How a CRT Forms a Picture**
  - 1. Deflection
    - Electromagnetic vs. electrostatic
    - Raster vs. random
  - 2. Intensity
  - 3. Beam cross-section
  - 4. Persistence
    - Long vs. short
    - Storage vs. refresh
  - 5. Color
    - Penetration vs. shadow mask
- VI **Commercially Available User Stations**
  - 1. General block
  - 2. Storage
    - Matrix (plasma)
  - 3. Refresh
  - 4. Scan Converter
  - 5. Digital TV
    - Large screen displays
  - 6. Combination Techniques
- VII **Input Devices**
  - 1. Alphanumeric and function keyboards
  - 2. Lightpen
  - 3. Cursor Controls
    - Thumb wheels
    - Track Ball
    - Joy Stick
    - Mouse
  - 4. Graphic Tablets
  - 5. Touch Panels
  - 6. Digitizers
  - 7. Automatic Digitizers
- VIII **Output Devices**
  - 1. Dry Silver
  - 2. Electromechanical
  - 3. Electrostatic
  - 4. COM
  - 5. Laser
  - 6. Color Plotters
  - 7. Combination Plotter/Digitizer
- IX **Complete Systems**
  - 1. Typical combinations
  - 2. Human Factors aspects of work stations
- X **Software**
  - 1. Commercially available picture software
    - DISSPLA
    - Graphhelp
    - GCS
    - Plot-10
    - Uniplot
- XI **Applications**
  - 1. Analysis vs. synthesis
  - 2. CAD/CAM
  - 3. MIS
  - 4. Control
  - 5. Spectrum analysis
  - 6. Other
- XII **Evaluation Techniques**
  - 1. Terminals
  - 2. Systems

**PLUS:** Each attendee receives a complete set of extremely valuable handout material.

## Why you should attend

With the introduction of new, low cost versatile hardware and software, Computer Graphics is rapidly becoming a work-a-day, time saving, dollar-saving tool. Computer Graphics shows charts, graphs, pictures and animated processes for maximum information and easiest comprehension. This course is for people who are now using, or making decisions about using Computer Graphics and its role in their organization. It will...

- Describe Computer Graphics
- Show how installing Computer Graphics can be justified
- Explain what Hardware/Software Systems are available
- Give costs and performance comparisons

-And most important of all-

**Demonstrate how Computer Graphics is being used in applications like your own**

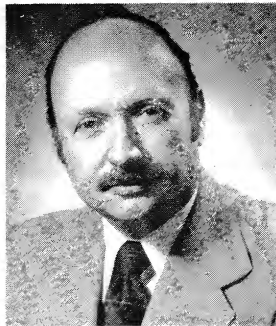
## You should attend if you're involved in:

- Using Computer Graphics
- Systems Analysis and Design
- Buying or selling Computer Graphics Equipment
- Engineering Design, Analysis and Planning
- Financial Management and Analysis
- Data Processing
- Management Information Systems

*Don't wait. Make your reservations.  
You and your company will be glad you did.*

See following page for complete information.

## Leader's Profile



**Carl Machover** is an internationally recognized computer graphics expert. He is head of Machover Associates Corporation, Consultants who provide a broad range of management, engineering, marketing and financial services to computer graphics users and suppliers. Among a long list

of clients served are such organizations as American Can, Boeing, Borg Warner and Calcomp.

He is on the Board of Directors of CDVS, and the Editorial Review Board of the "Computer Display Review," as well as "Computers and Graphics," and has written over two dozen articles on computer graphics for a wide variety of important periodicals. He was formerly Executive Vice President of Information Displays Inc., a leading computer graphics manufacturer, where, for nearly two decades, he worked with users in implementing new applications and systems.

He graduated as an electrical engineer from Rensselaer Polytechnic Institute and has over 25 years total experience. He's a fellow of the Society for Information Display (National President for two years), Association for Computing Machinery (SIGGRAPH), the Institute of Electrical and Electronics Engineers, the American Institute of Design and Drafting and the National Society of Professional Engineers.

## What Attendees say about the Course

**"Course was excellent and brought me up to date on the latest in Computer Graphics."**

Raymond R. Bober, Ebasco Services Inc., New York, N.Y.

**"Good overview of current Computer Graphics environment."**

Gilbert W. Carl, Jr., IBM, Poughkeepsie, N.Y.

**"This has been a useful, comprehensive "crash" course in state of the art graphic systems for those needing current information on Interactive Graphics."**

Charles O. Hancock, Sybron Castle Co., Rochester, N.Y.

**"A good overview of Computer Graphics for someone new to the subject."**

Albert J. Linder, IBM, White Plains, N.Y.

**"Carl Machover's knowledge in the field of Computer Graphics is complete and thorough."**

Roscoe T. Mack, Grumman Data Systems, Bethpage, N.Y.

**"Most comprehensive survey of Interactive Graphics field, including hardware, software and applications. Instructor an expert in this field."**

Irving Margolis, Lummus Co., Bloomfield, N.J.

**"Very good overview of the subject and industry. Machover really knows his subject."**

Sally Shorthill, Tektronix, Inc., Beaverton, Oregon



## General Information

### 3 Ways to Register Fast

#### 1. By Phone

Call (212) BE 3-1080 and ask for Bob Sanzo. You'll get immediate confirmation of your registration.

#### 2. By Mail

Please fill out and mail the Registration Form below as soon as possible.

#### 3. By Telex

TWX 235986. Please give Seminar Title, Date, your name, title, company, address and phone of each registrant.

### Schedule

Seminar sessions are from 9:00 am to 12:30 pm and 1:45 pm to 5:00 pm. There will be short coffee breaks each morning and afternoon.

### Registration Fees

**\$495** - Individual Fee, including all handout material.

**\$445** - For each additional attendee from same company. It is extremely worthwhile to send your **team**. During the sessions, they'll compare notes and reinforce their thinking on how the ideas and concepts presented relate to the company's specific problems. Back home, they'll be able to implement and reinforce each other's efforts.

### Tax Deduction for all Educational Expenses

Treasury regulation § 1.162-5 permits an income tax deduction for educational expenses (registration fees and cost of travel, meals and lodging) undertaken to: (1) maintain or improve skills required in one's employment or other trade or business, or (2) meet express requirements of an employer or a law imposed as a condition to retention of employment, job status or rate of compensation.

### Diploma

Each attendee receives a laminated plastic diploma affirming that 1.9 CEU's have been achieved. CEU stands for Continuing Education Unit, which is a nationwide standard, recognized and respected on a rapidly increasing scale, as a basis of comparison for higher education. Recorded on a permanent transcript, which may be transmitted only with your authorization, CEU's may be utilized as evidence of increased performance capabilities and enhanced knowledge.

### Transfers and Cancellations

Transfers or substitutions may be made at any time. A confirmed registration may be cancelled without cost up to one week before the start of the Seminar. After this date, there will be a \$50 service charge.

**Frost & Sullivan** is a well-known leader in the field of executive education, research and development through the media of seminars, conferences, reports and cassettes.

# Understanding and Using Computer Graphics

Please cut along this line and return

## Understanding and Using Computer Graphics

**February 5-7**  
**April 18-20**

**New York**  
**Dallas**

☐  
☐

Please check  
which seminar  
you will attend

- ☐ CHECK ENCLOSED  
(\$495 Individual  
\$445 Each additional  
Participant)
- ☐ Please Bill Company

Name and Title of Participants (Print for Nameplate and Certificate)

1. Name \_\_\_\_\_ Title \_\_\_\_\_

2. Name \_\_\_\_\_ Title \_\_\_\_\_

3. Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_  
(Please use Full Name)

Division \_\_\_\_\_

Street \_\_\_\_\_ Tel. No. \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



**Frost & Sullivan**

Dept. C-2  
106 Fulton Street  
New York, N.Y. 10038  
Telephone: 212-233-1080  
Telex: 235986

registration form